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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,556	09/19/2003	Robert Leah	5577-280	4595

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EXAMINER

WOODS, ERIC V

ART UNIT	PAPER NUMBER
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2628

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/664,556

Applicant(s)

LEAH ET AL.

Examiner

Eric Woods

Art Unit

2628

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Specifically, the title of the invention is suggested to be within 2-7 words and be descriptive. The title is not descriptive because it recites 'method, system, and computer program product' for ... and then describes the invention. The title should reflect the nature of the invention, not the multiplicity of statutory category of inventions wherein such invention can be patented in.

The specification is objected to under 35 USC 112, first paragraph, because it recites a device structure that appears to be impossible and contradicts itself. That is, Figure 3 shows a memory 136 -- also shown in Figure 2 -- that is stated in 8:15-17 to be inclusive of ROM-type memories. The reason that it appears to be impossible is that, from a basic computer-engineering standpoint, any processor requires a memory to store [temporary] results of the various processes. Specifically, any computer can be considered a type of Turing machine, and a Turing machine requires external memories ("A Turing machine is a finite state machine associated with an external storage or memory medium." (Minsky (1967), p. 117, *Computation: Finite and Infinite Machines*, Prentice-Hall, Inc., N.J., 1967.) In the instant case, the device obviously will be processing data from source (e.g. the tree-map data set 262 and data 256 in memory 136 in Figure 3) and must perform interim calculations upon such data to generate tree map 260, as shown in Figure 136. However, if the memory is ROM type, it is

impossible that interim results for the processor can be performed, and specifically also, since all computers are instances of Turing machines (Universal).

In support of this definition, applicant's specification clearly sets forth (8:32-33):
"Finally, the **data 256 represents** the static and **DYNAMIC data** used by the application programs 254, the operating system 252..." Wherein "dynamic data" is inherently non-static and requires a priori that it be generated and placed into memory, wherein a ROM cannot be written to. E.g. the applicant's specification clearly points out that the memory 136 cannot be ROM type.

Applicant is required to clarify this point, since the specification contradicts itself on this point. If memory were ROM-type it would appear that any hardware implementations as Figure 3 would be inoperative, as explained by applicant's own specification.

Drawings

Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated (Specification page 2, line 23). See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Information Disclosure Statement

The information disclosure statements (IDS) submitted on (03/05/2004, 02/11/2005, 03/17/2005, 05/09/2005) were filed before the mailing date of the First Action on the merits. The submissions are in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner is considering the information disclosure statements.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1, 3-9, and 11-18 stand rejected under 35 U.S.C. 101 because they recite non-statutory subject matter.

Specifically, claims 17 and 18 fail to comply with the Interim Guidelines for Patent Subject Matter Eligibility; specifically they recite a computer program per se (see pages 30 and 51-56). In order for a computer program to be properly claimed, it must be claimed as a manufacture, that is, a **physical, tangible** item that is **functionally interrelated** with a computer program via the program being encoded upon said item, wherein the physical, tangible item needs to be computer-readable. Thusly, "A ... computer program product ..." fails to properly invoke the required functional interrelationship between medium and program. See MPEP 2105-2106. The item being should be claimed is **not** the program per se; rather it is a physical computer readable medium that is encoded with a computer program that causes a computer to perform some task. Therefore, the proper order of those elements (computer readable medium and program) in the claim should be of the form recited above for the claims to

be held as statutory. As written, the claims are now directed to a computer program per se, which is not within the four statutory categories of patent-eligible subject matter.

Claims 17 and 18 are shown to be software via the specification (14:14-20).

With respect to claim 17, the recited means are disclosed to be software

Further, claim 18 is rejected because it recites a signal-type claim element, e.g. a computer program product can be construed as inclusive of some kind of computer-readable medium, wherein the instant specification (6:14-15) recites a "transmission media." See Interim Guidelines pages 50-55.

Next, claim 1 stands rejected because the recited method does not produce the required concrete, practical, and tangible result. Specifically, 'generating a treemap visualization' does not require that the visualization be displayed, wherein the recited information therefore remains within the memory of the computing device.

Claims 3-9 are rejected for not correcting the deficiencies of their parent claim(s).

Claim 11 recites 'a tree map visualization.' This item does not fall within the four recited classes of eligible subject matter. It clearly is not a process or a composition of matter, and since the recited claim is only directed to a pattern on a display device, it cannot be fairly considered to be a tangible manufacture, in the sense that a manufacture is required to be tangible, concrete, and practical. Therefore, it cannot be an improvement thereof. The recited claim is only directed to abstract data shown on a display screen. While a computer readable medium containing a program to generate such an item, a system producing such an item, or a method of generating and

displaying such an item could all be patentable, the recited 'treemap visualization' cannot fall within one of the four statutory category inventions.

Claims 12-16 are rejected for not correcting the deficiencies of their parent claim(s).

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 17 stands rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specifically, claim 17 recites 'means' which are disclosed to be hardware, wherein the recited hardware implementation has been shown above (in the discussion concerning the specification) to be non-functional under certain circumstances, and contradicts itself. If one embodiment is disclosed that shows or it is proven or shown that the specification is not enabling for one embodiment, either for undue experimentation, or for other reasons, then all claims that have scope covering those un-enabled embodiments (given that claims are written using comprising language, which in the instant case they are) fail the enablement (See *Liebel-Flarsheim v. Medrad* (Fed. Cir. 2007, decided March 22, 2007; Fed. Cir. Docket 06-1156,-1157)).

Stipulations

Examiner asserts the claim 17 can be read in a generic manner; that is, the specification teaches broadly that the elements can be any combination of software modules or elements or hardware circuits. Therefore, since applicant has pointed out and set forth that the recited 'means' can be generic software and hardware, the claimed invention can be met by any reference that discloses any particular implementation, whether hardware, software, or a combination of both. See generally specification 14:5-15 and other locations.

Definitions:

1. Prioritize. Specification, page 13: "That data may be prioritized based on any suitable analysis of the data, for example, the data may be prioritized based on a series of threshold values ... The priority of an element of the data set may be based on the values of data that is displayed in the tree map...data may be prioritized based on one or more of the data values that are used in generating the tree map"

Example Figure 4: Data shown in Figure 4, from Table 4, data is shown to be (primarily) ranked in order of data value.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-5 and 7-18 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Ikehata et al (US PGPub 2003/0158846 A1) in view of Card et al (US PGPub 2003/0085931).

As for claim 1, 11, 17, and 18 (method, visualization *per se*, system improperly claimed as means plus function that is software, computer program product):

A method of displaying data from a data set in a tree map visualization, comprising:
(Ikehata Figures 8-10)

-Prioritizing the data in the data set so as to associate a priority with respective elements of the data in the data set; and (Card teaches prioritizing the size of nodes based on focus – see Card [0086], Figures 3-5 exemplary, process in Figure 1)

-Generating the tree map visualization based on the data set where a location of boxes in the tree map visualization is based on the priority associated with the corresponding element. (Ikehata shows in Figures 8-10 treemap visualizations, wherein their location is based on their size (as an example [0051-0053]))

Ikehata teaches all the limitations of the instant claims except expressly teaching that data elements / nodes within the treemap have priority, but does teach sorting by

ascending or descending order based on size and/or statistical properties. Ikehata further teaches that the prior art does suggest such limitations [0014], and in Figures 6 and 4A/4B teaches such, as explained in [0019, 0021, 0055-0057, 0060-0061, 0077-0082, 0089], and states that section order could have been used. It would have been obvious to one of ordinary skill in the art at the time was made to modify Ikehata in light of Card to allow nodes to have priority based on external factors in order to facilitate user visualization of same (see Card [0085-0086, 0014, etc]).

As to claim 2, clearly Ikehata has rectangular elements, which therefore have bounding boxes that are the same as those elements. Therefore, is logical that if the elements are arranged in a priority pattern, the bounding boxes will as well.

As to claim 3, Ikehata teaches that elements can be ordered in stripe based patterns, wherein the weight / rank / priority decreases from right to left, which would clearly yield (Figure 6, one form or the other) a graph that has diagonally increasing or decreasing priority, as priority would change in a monotonic linear fashion in a progression from one edge of the graph to the other.

As to claim 4, Ikehata teaches ranking elements based on their size, e.g. the data value itself [0016, 0019, 0021, etc].

As to claim 5, Ikehata fails to expressly teach, but Card clearly teaches that priority is derived from focus factor, which is a 'data value of the element not used in generated treemap.'

As to claim 7, examiner takes Official Notice of the fact that assigning objects a unique rank or order (especially in the case of Card, since priorities are focus-derived) is

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old and well known in the art, because it enables visualization of a data set in an absolute order rather than relative priorities.

As to claim 8, Ikehata fails to teach dynamic prioritization of data, while Card teaches changing priorities from by user focus (Abstract, [0014-15,0119,0086,0066]).

As to claim 9, Ikehata teaches nodes having statically described priority derived from statistical data value as described in rejection to claim 1 above.

As to claim 12, Ikehata teaches priority is derived from first data value in element (e.g. statistical order as explained above in rejection to claim 1).

As to claims 13 and 14, examiner takes Official Notice of the fact that nodes or elements can have multiple data values associated with them and further that the use of one of the other values for use in deriving priority is old and well known in the art and that the motivation to do so would be in order to allow data points that are n-dimensional to be sorted by their priorities or values along various axes of the actual data set (e.g. time, amplitude, etc).

As to claim 15, see Ikehata Figure 6.

As to claims 10 and 16, Examiner takes Official Notice of the fact that, given that the data of Ikehata is organized in strips and objects can have relative priority and can be displayed in descending or ascending order, it would have been obvious to one of ordinary skill in the art to display items having the same or similar relative priorities in a data strip, in order to more clearly convey a measure of absolute vs. relative priority and data size of the data objects with respect to each other, even if this created some void

or unused regions and that such is not in contravention of the fundamental techniques and principles of data visualization.

Claim 6 is rejected under 35 USC 103(a) as unpatentable over Ikehata in view of Card as applied to claim 1 and further in view of Nomiyama et al (US PGPub 2002/0091684 A1).

As to claim 6, Ikehata and card fail to teach extracting priority information from metadata, but Nomiyama teaches a system that derives information from the internet via obtaining elements that have associated metadata (Abstract) and the element sets have an importance level and element sets are displayed in the order of the importance level [0105], where it would have been obvious to one of ordinary skill in the art at the time the invention was made because this is advantageous [0032, 0015-0020] such that the user can obtain elements from various locations and visualize composite data sets, and have annotation and other information about a statistical data value associated with the metadata tag in the metadata database 12 of Nomiyama.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Woods whose telephone number is 571-272-7775. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on 571-272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Eric Woods

3/29/2007

A handwritten signature in black ink, appearing to read 'K. M. Tung', with a long, sweeping horizontal stroke extending to the right.

KEE M. TUNG
SUPERVISORY PATENT EXAMINER